

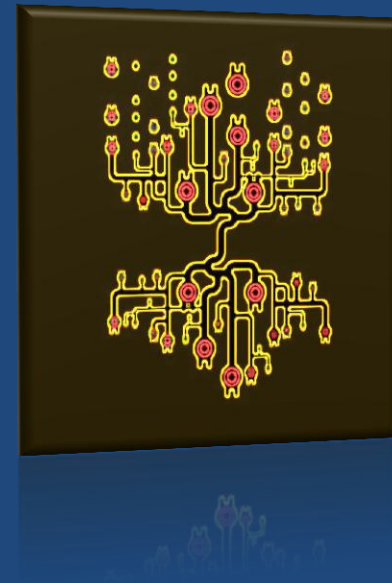
Network Design Scenario

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GRIT 780

Fall 2010



Network Plan

Crayola Intermediary School is the first new building in 25 years for the Magic Marker School District. As a result students and teacher will benefit from having access to the most up-to-date technology for education.

Needs Assessments

Students attending Crayola Middle School matriculate through grades 7th and 8th in this newly constructed building. There 16 core subject teachers, five special teachers (gym, language, family/consumer science, and art and computers), two administrators, two secretaries, and one librarian. A computing network is needed in this building to support administrative and academic tasks. Based on a recent needs assessment the following equipment will be installed as noted:

- 16 laptops for core subject teachers
 - 4 shared printers
- 5 laptops for specials teachers
- 9 Printers
 - 2 - 1 printer each for computer lab and gym
 - 2 - 1 printer each administrative office
 - 1 printer in main office
 - 2 printers in library on both floor
 - 2 – 1 each hallway
- 2 laptops for administrators
- 2 work stations for secretaries
- 10 workstations for library 2nd floor
- 32 workstation computer lab
- 1 laptop for librarian
 - 1 shared printer
- 22 Promethean Boards for all classrooms and library
- 2 Richo Copiers
 - Library, 2nd floor
 - Main office
- VoIP telecommunications system
 - 30 phones for all classrooms, offices, and library (both floors)

Totals:

Laptops – 24

Work stations – 44

Printers – 9 printers

Promethean Boards – 22

Copiers – 2

Phones - 30

Network Plan

LAN Description for Crayola Intermediary

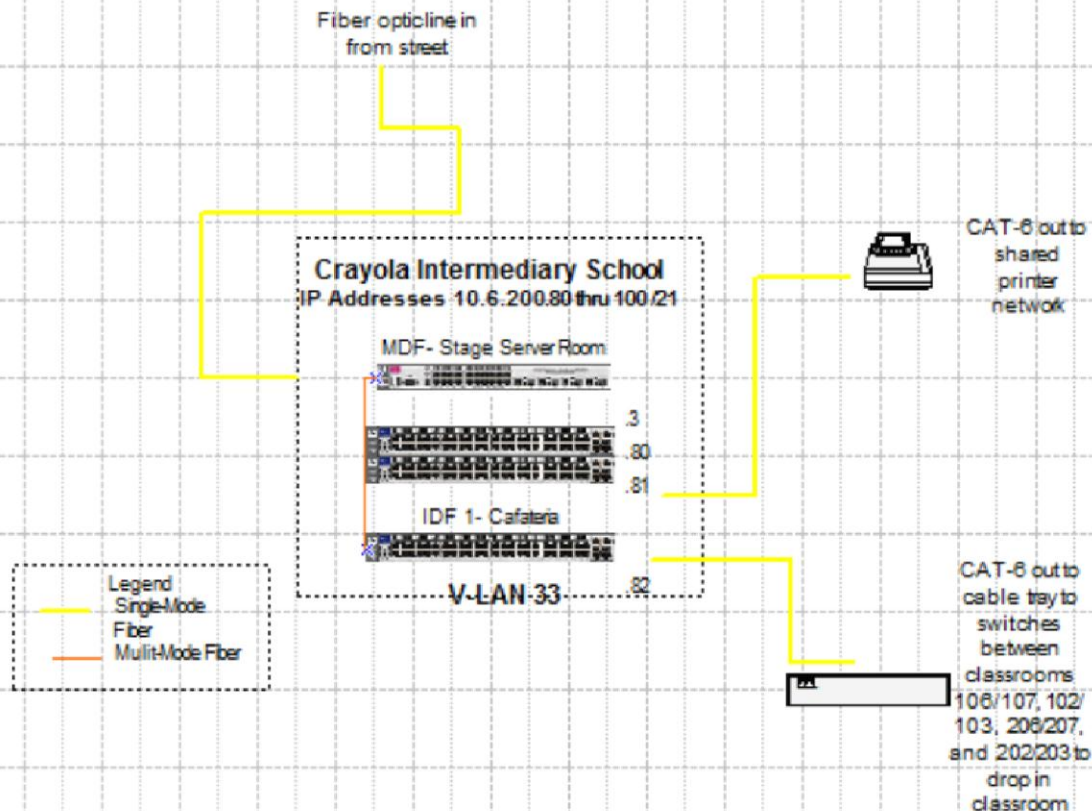
The local area network is supported by a fiber optic backbone that enters from the Verizon Wireless lines from the street connecting to the MDF located in the 1st floor, air-conditioned server room on the stage. Internet and telephone communications are directed through our firewall as data is feed to our server. Only one server is need to support this midsize building. The data from the server is routed to a 48-port switch that sends data over CAT-6 cables to switches located in the middle of each floor on both sides (CAT-6 out to cable tray to switches between classrooms 106/107, 102/103, 206/207, and 202/203) and to the IDF located in a air-conditioned closet in the computer lab. From the switches CAT-6 continues to classrooms to the two drops per classroom bring Internet and phone lines into each. The lines also connect each drop to the shared printers. Printers can also be accessed wirelessly for teacher and student laptops. Also leading from initial entry into each classroom is a CAT-6 line to the WAP located in the ceiling of each classroom, library, main office, and multipurpose room. A UPS battery pack supports the system for 30 minutes in the event of a power outage.

Classroom Configuration

Internet and phone lines will enter each classroom via two hardwire drops and one WAP. The drops are both located catty-corner to each other at the front-left and lower-right corner of door. The latter location is situated in accordance with code red practices in the district for teacher's workstation. Each classroom is outfitted with a phone, projector, SMART board, document camera, and built-in speakers. At each drop is a audio/visual panel with connections from projector, speaker, SMART Boards, and Internet. SMART boards were selected as touch IWBs are ideal for primary and intermediary grades.

Crayola Intermediary School – 2nd Floor

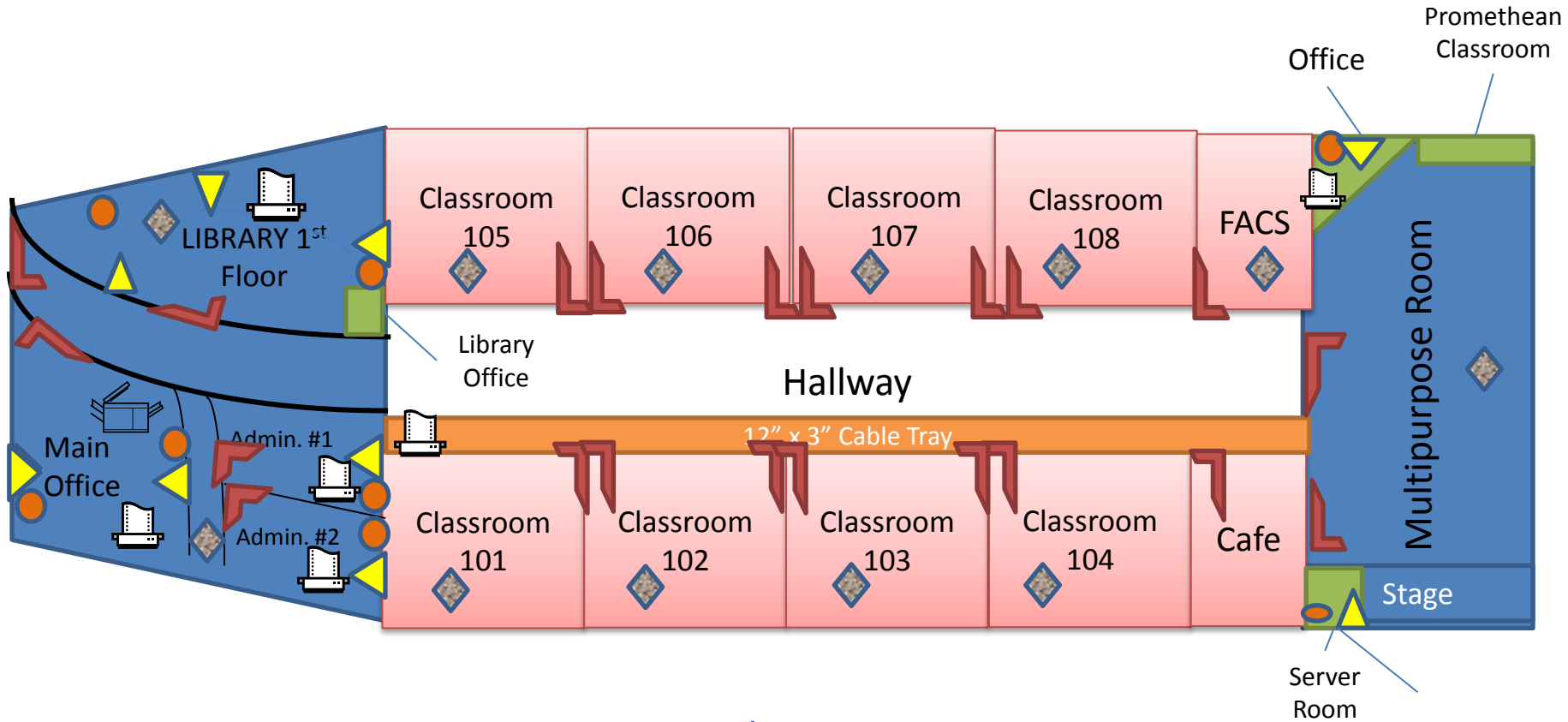
Crayola Intermediary School LAN Layout



MDF located in Stage Server Room 1st floor; IDF located in Computer Lab 2nd floor

Crayola Intermediary
School – 1st Floor

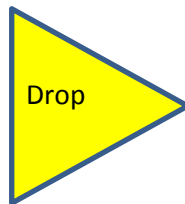
7th Grade



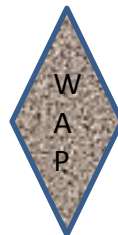
Door



Phone
Line



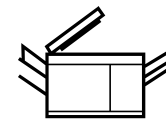
Drop



W
A
P



printer

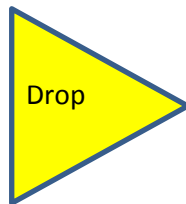
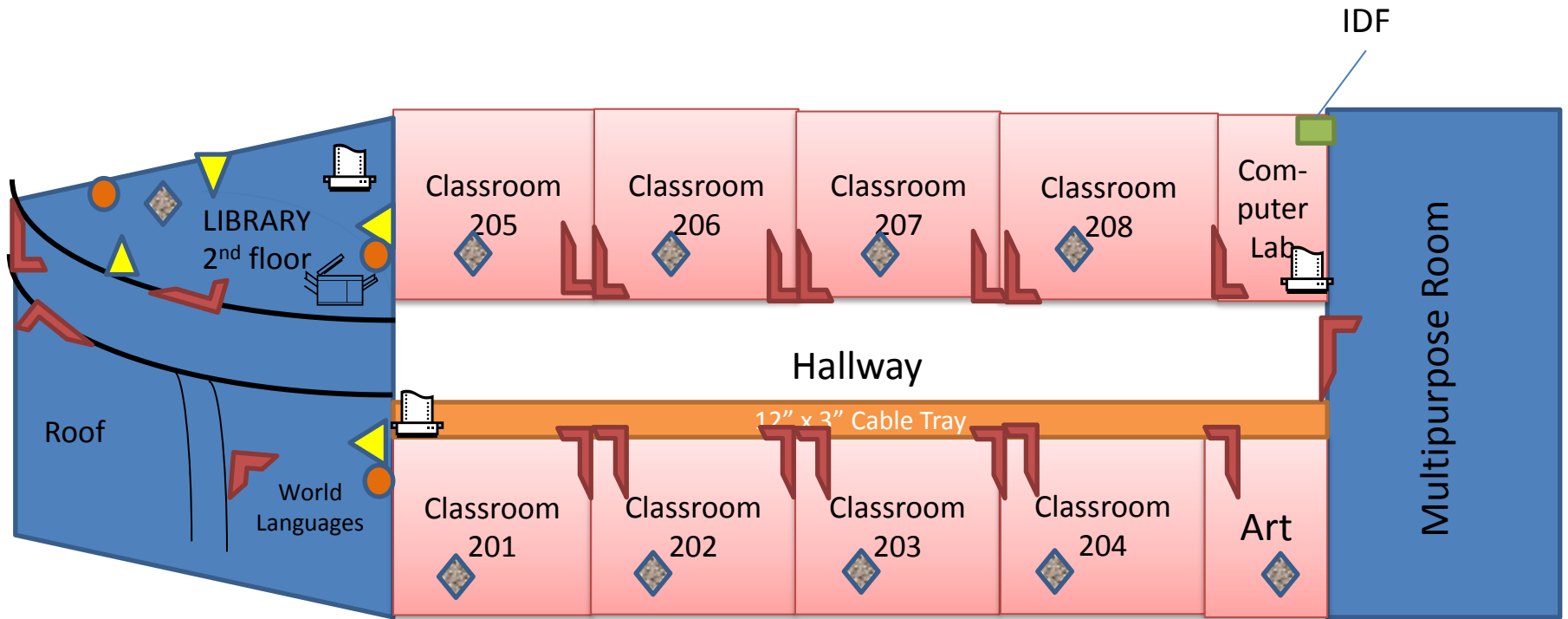


Copier

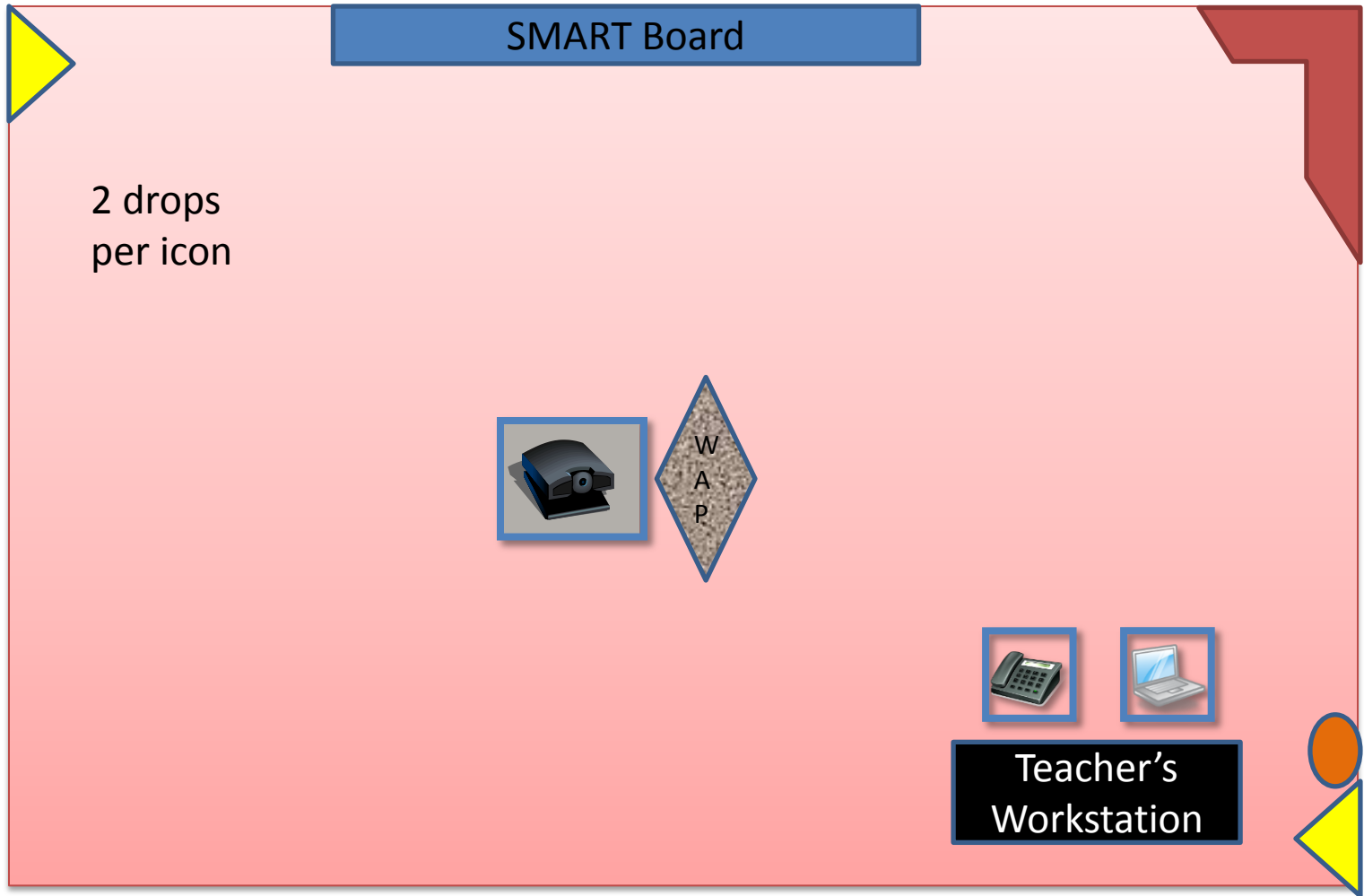
MDF

Crayola Intermediary
School – 2nd Floor

8th Grade



Classroom Configuration



Crayola Intermediary
School – 2nd Floor

Computer Lab Configuration

